

**What is claimed is:**

1. A method for processing audio signals, and processing left and right channel audio signals, comprising the steps of:

processing a left channel input signal by a gain unit and a high-pass filter;

5 and then dividing the left channel input signal into a first left channel signal and a second left channel signal;

processing a right channel input signal by a gain unit and a high-pass filter, and then dividing the right channel input signal into a first right channel signal and a second right channel signal;

10 processing the second left channel signal by a low-pass filter processing unit and a delaying processing unit, and subtracting a processed signal from the first right channel input signal to produce a first right channel output signal; and

processing the second right channel signal by a low-pass filter processing  
15 unit and a delaying processing unit, and subtracting a processed signal from the first left channel input signal to produce a first left channel output signal.

2. The method for processing audio signals as in claim 1, further comprising:

processing parts of the first left channel output signal by a gain unit and subtracting the processed first left channel output signal from the first right  
20 channel output signal to produce a second left channel output signal; and

processing parts of the first right channel output signal by a gain unit and subtracting the processed first right channel output signal from the first left channel output signal to produce a second right channel output signal.

3. The method for processing audio signals as in claim 2, further comprising:

processing the left channel input signal by a gain unit and adding the processed left channel input signal to the second left channel output signal;

processing the right channel input signal by a gain unit and adding the processed right channel input signal to the second right channel output signal.

5 4. An apparatus for processing audio signals, and processing left and right channel audio signals, comprising:

a first gain and high-pass filter processing unit;

a first low-pass filter processing and delay processing unit connected with the first gain and high-pass filter processing unit;

10 a second gain and high-pass filter processing unit;

a second low-pass filter processing and delay processing unit connected with the second gain and high-pass filter processing unit;

a first subtracter connected to the output of the first gain and high-pass filter processing unit as well as the second low-pass filter processing and delay processing unit; and  
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a second subtracter connected to the output of the second gain and high-pass filter processing unit as well as the first low-pass filter processing and delay processing unit.

5. The apparatus for processing audio signals as in claim 4, further comprising:

20 a third subtracter connected to the first subtracter and the second subtracter;

a fourth subtracter connected to the first subtracter;

a fifth subtracter connected to the second subtracter; and

a third gain unit connected to the third subtracter, the fourth subtracter, and

the fifth subtracter.

6. The apparatus for processing audio signals as in claim 4, further comprising:

a first amplifier connected to the left channel output port and the fourth subtracter; and

5 a second amplifier connected to the right channel output port and the fifth subtracter.